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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,324	05/18/2007	Guillaume Bouche	S1022.81158US00	5686
46329	7590	11/13/2009		
STMicroelectronics Inc. c/o WOLF, GREENFIELD & SACKS, P.C. 600 Atlantic Avenue BOSTON, MA 02210-2206			EXAMINER AHMED, SELIM U	
			ART UNIT 2826	PAPER NUMBER
			MAIL DATE 11/13/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/580,324	BOUCHE, GUILLAUME	
	<b>Examiner</b>	<b>Art Unit</b>	
	SELIM AHMED	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6 and 11-28 is/are pending in the application.
- 4a) Of the above claim(s) 25-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 11-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/26/2009 has been entered.
2. Applicant's remark filed on 08/26/2009 is acknowledged. Applicants have amended claims 1, 2, 5; and added new claims 18-28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Furthermore, applicant's newly submitted claims 25-28 withdrawn from further consideration as being drawn to a nonelected invention (method), there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 03/27/2008 (please see office action mailed on 10/31/2008).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-3, 5, 6, 11-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cabuz ET al (US 6,837,476; Cabuz hereinafter).

With regard to claim 1, Cabuz discloses an integrated circuit chip including a pump e.g. Figs. 10-12, comprising: a cavity 114 formed in an insulating substrate 10 (col. 6, lines 18-39), a upper portion of the substrate 10 located in the vicinity of the cavity (thick edge of the 112 where no cavity) and a border is defined at an intersection between the cavity and the upper portion of the substrate (near the thick edge of the 112 where cavity 114 and the upper portion of the substrate intersect); a conductive layer 130 covering the inside of the cavity at least up to the border (Figs. 11, 12); a flexible membrane 120, including a conductive material (col. 6, lines 41-42), placed above the cavity 114 and bearing against the border (e.g. Fig. 10); a dielectric layer (col.6, lines 51-56) that provides insulation between portions of the conductive layer 130 and of the conductive material of the membrane 120 which are close to each other (col.6, line 51-56); a pumping volume defined between the conductive layer and the flexible membrane (As shown in Figs. 11 & 12, elements 120 and 130 define the volume); a first opening 122 or 124 that provides fluid communication to the pumping volume through the conductive layer 130; a second opening (opening across from 122 or 124 that are closer to the border) positioned closer to the border of the cavity 18 than the first opening 122 or 124 that provides fluid communication to the pumping volume (capable of meeting the functional

limitation of “fluid communication to the pumping volume”. Furthermore, Figs. 13-15 show 160 as an inlet which is closer to the border. Since 160 is an inlet, it provides fluid communication to the pumping volume); and terminals to receive and apply a voltage (e.g. col. 1, lines 52-60) between the conductive layer 130 and the membrane 120 to cause the flexible membrane to move (e.g. Fig. 12) to pump air through the pumping volume (col.1, background).

With regard to claim 2, e.g. Fig. 11 of Cabuz discloses the integrated circuit chip of claim 1, wherein said cavity 114 has substantially a cup shape of a cup so that the interval between the conductive layer 130 and the membrane 120 progressively increases from the border to a bottom of the cavity 114.

With regard to claim 3, col. 2, lines 12-19, of Cabuz discloses the integrated circuit chip of claim 1, wherein the membrane is in an idle state when no voltage is applied between said terminals, the application of a voltage deforming the membrane by drawing it closer to the conductive layer, the suppression of the voltage bringing the membrane back to its idle state.

With regard to claim 5, e.g. Fig. 7, element 94 of Cabuz discloses the integrated circuit chip of claim 1, wherein the first opening 94 is positioned one substantially at the bottom of the cavity.

With regard to claim 6, e.g. Fig.11, 12 of Cabuz discloses integrated circuit chip of claim 1, further comprising a ventilating duct (part of 122 within substrate) formed at least in part in the semiconductor substrate of the integrated circuit and that leads up to the first opening 122.

With regard to claim 11, e.g. Fig. 11 of Cabuz discloses the integrated circuit chip of claim 1, further comprising a first ventilating duct (part of 122 within substrate 112) formed at least in part in the semiconductor substrate 112 of the integrated circuit and that leads to the first opening 122 and a second ventilating duct (part of the larger opening across from 122 or 124 within substrate) formed at least in part in the semiconductor substrate 112 and that leads to the second opening.

With regard to claim 12, e.g. Fig. 10 of Cabuz discloses the integrated circuit chip of claim 1, wherein the second opening is larger than the first opening (122 or 124 is smaller than the opening across from 122 or 124).

With regard to claim 13, e.g. col.6, lines 51-55 of Cabuz discloses the integrated circuit chip of claim 1, wherein the dielectric layer is positioned on the conductive layer 130.

With regard to claim 14, e.g. col.6, line 51-55 of Cabuz discloses the integrated circuit chip of claim 1, wherein the dielectric layer is positioned on the flexible membrane 120.

With regard to claim 15, e.g. col. 6, lines 41 of Cabuz discloses the integrated circuit chip of claim 1, wherein the flexible membrane is formed of a conductive material.

With regard to claim 16, limitations such as, "provides selective fluid communication with the pumping volume" found to be functional since an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). Furthermore, as shown in Figs. 13-15, opening 160 closer to the border is an inlet. Since 160 is an inlet, it provides selective fluid communication with the pumping volume.

With regard to claim 17, e.g. Fig. 12 of Cabuz discloses the integrated circuit chip of claim 16, wherein application of the voltage to the terminals causes the flexible membrane to move toward the conductive layer to close fluid communication between the second opening and the pumping volume.

With regard to claim 18, e.g. Figs. 10-12 of Cabuz discloses an integrated circuit chip including a pump comprising: a cavity 114 formed in an insulating substrate (col. 6, lines 18-39); a conductive layer 130 covering at least a portion of an interior of the cavity 114; a flexible membrane 120, including a conductive material (col. 6, lines 41-42), placed above the cavity 114; a dielectric layer (col.6, lines 51-56) that provides insulation between portions of the conductive layer 130 and the conductive material of the membrane 120 which are close to each other (col.6, line 51-56); a pumping volume defined between the conductive layer and the flexible membrane (As shown in Figs. 11 & 12, elements 120 and 130 define the volume); a first opening 122 or 124 that provides fluid communication to the pumping volume through the conductive layer 130; a second opening (opening across from 122 or 124 that are closer to the border) that provides fluid communication to the pumping volume (capable of meeting the functional limitation of "fluid communication to the pumping volume". Furthermore, Figs. 13-15 show 160 as an inlet which is closer to the border. Since 160 is an inlet, it provides fluid communication to the pumping volume);



and terminals to receive and apply a voltage (e.g. col. 1, lines 52-60) between the conductive layer 130 and the membrane 120 to cause the flexible membrane to move (e.g. Fig. 12); wherein the flexible membrane 120 is configured to cover at least the second opening when the voltage is applied, the second opening being larger than the first opening (e.g. Fig. 11) to promote the introduction of air to the pumping volume through the second opening when the voltage is reduced.

Furthermore, an apparatus must be distinguished from the prior art in terms of structure rather than function (i.e. “to receive and apply a voltage between the conductive layer and the membrane to cause the flexible membrane to move” and “to promote the introduction of air to the pumping volume through the second opening when the voltage is reduced”. In another words, the second opening can be covered by membrane with application of proper type of voltage. Applicant is reciting how the integrated circuit will function instead of structure. Since Cabuz discloses identical structure with all the elements claimed, it is reasonable to assume that Cabuze device is capable of performing the function i.e. moving the membrane with application of voltage and covering the second opening). *In re Schreiber*, 128 F.3d 1473, 1477-78, 44USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210 212-13, 169 USPQ 226, 228-

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29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “Apparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

With regard to claim 19, e.g. Fig. 11 of Cabuz discloses the integrated circuit chip of claim 18, wherein said cavity 114 has a cup shape (Fig. 12) so that an interval between the conductive layer 130 and the membrane 120 progressively increases from a border, formed between the cavity 114 and an upper surface of the substrate, to the bottom of a cavity.

With regard to claim 20, e.g. Fig. 13 of Cabuz discloses the integrated circuit chip of claim 19, wherein the first opening 162 is positioned substantially at the bottom of the cavity 142.

With regard to claim 21, e.g. Fig. 11 of Cabuz discloses the integrated circuit chip of claim 1, further comprising a first ventilating duct (part of 122 within substrate 112) formed at least in part in the semiconductor substrate 112 of the integrated circuit and that leads to the first opening 122 and a second ventilating duct (part of the larger opening across from 122 or 124 within substrate) formed at least in part in the semiconductor substrate 112 and that leads to the second opening.

With regard to claim 22, e.g. col.6, lines 51-55 of Cabuz discloses the integrated circuit chip of claim 1, wherein the dielectric layer is positioned on the conductive layer 130.

With regard to claim 23, e.g. col.6, line 51-55 of Cabuz discloses the integrated circuit chip of claim 1, wherein the dielectric layer is positioned on the flexible membrane 120.

With regard to claim 24, e.g. col. 6, lines 41 of Cabuz discloses the integrated circuit chip of claim 1, wherein the flexible membrane is formed of a conductive material.

### **Conclusion**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SELIM AHMED whose telephone number is (571)270-5025. The examiner can normally be reached on 9:00 AM-6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571)272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SA/

/Ben P Sandvik/  
Examiner, Art Unit 2826